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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,897	12/18/2001	Ulrich Holeschovsky	Mo6805/MD-99-88-PU	2174

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EXAMINER	
HARAN, JOHN T	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,897	HOLESCHOVSKY ET AL.	
	Examiner	Art Unit	
	John T. Haran	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment and arguments filed on 6/10/04.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 15-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irwin (U.S. Patent 5,612,113) in view of Langsdorf et al (U.S. Patent 6,299,715) and Nohr et al (U.S. Patent 5,578,369) and optionally taken with Takizawa et al (U.S. Patent 6,299,714), Strobel et al (U.S. Patent 5,244,780), Hinterwladner et al (U.S. Patent 5,070,121), and Gastiger et al (U.S. Patent 5,527,629).

Irwin is directed to a method of making a carpet wherein a primary backing with fibers tufted into it (greige good) is coated on its back surface with a precoat such as polyurethane adhesive and a flexible film, such as polypropylene (a polyolefin), that has been corona treated in order to enhance the adhesive properties of the film, is contacted to the back surface of the precoat (Column 4, lines 15-41 and Column 2, lines 46-56).

Irwin is silent towards the power density of the corona discharge applied to the film. It is notoriously well known and conventional that corona discharge treating a surface increases its adhesive properties (improves adherence by increasing the wettability of the film) as shown for example in Strobel et al (Column 1, lines 6-10),

Takizawa et al (Column 2, lines 19-27), Hinterwaldner et al (Column 23, lines 53-60), Gastiger et al (Column 1, lines 15-17), or Nohr et al (Column 6, lines 33-45). Additionally it is known in the art that corona discharge increases the adhesion properties and wettability of polyolefins, as shown in Gastiger et al (Column 1, lines 15-17) and Nohr (Column 6, lines 33-45). Furthermore it is known in the art to increase the adhesion properties of polyolefin films, such as polypropylene, to adhesives by treating the polyolefin film with corona discharge with a power density between 2 and 10 kW/m2 (0.2 to 1.0 W/cm2) by increasing its wettability resulting in increase adherence as shown in Nohr (Column 6, lines 33-45; Column 3, lines 42-43). Additionally one skilled in the art would have readily appreciated that the power density would depend upon a variety of factors such as the material of the film, the material is to be bonded with, etc. It would have been within the purview of one skilled in the art to determine the optimum power density for achieving the desired adhesion of the film to the precoat keeping these factors in mind and only the expected results would be achieved. It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the applicable power density range for the corona discharge in order to achieve the desired adhesion of the film to the precoat in the method of Irwin and as suggested in Nohr et al.

Irwin is also silent towards curing the polyurethane adhesive precoat, however one skilled in the art would have readily appreciated that the precoat would not be fully cured until after the treated flexible film is applied in order to ensure adequate adhesion. Furthermore it is known in the carpet art to apply polyurethane adhesive to a primary

carpet backing and fully cure the adhesive after a flexible polypropylene film has been applied, as shown in Langsdorf et al (Column 1, lines 11-14; Column 4, lines 36-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made not to fully cure the precoat until after the flexible film, which has been treated with corona discharge within the optimum power density range, has been applied in the method of Irwin, as suggested by Langsdorf et al.

Regarding claim 16, Langsdorf et al teaches applying multiple layers for the precoat and that they can be foams (Column 10, lines 32-43) and as noted above they are not fully cured until after the flexible film has been applied. It would have been obvious to use a known combination of adhesive and foam to apply to a greige good before applying a flexible film in the method of Irwin, as modified above.

Regarding claim 17, Irwin teaches adhering a foam layer to the back surface of the corona treated flexible film (Column 4, lines 39-41).

Regarding claim 18, one skilled in the art would have readily appreciated that the curing temperature and duration would depend upon a variety of factors such as the material worked upon, the thickness of the adhesive, the intensity of the curing source, etc. It would have been within the purview of one skilled in the art to determine the parameters for achieving an adequate adherence and to determine the optimum parameters. It would have been obvious to determine the optimum parameters.

Regarding claims 19 to 21, it is well known and conventional in the carpet art to have precoats and foams that comprise reactive polyurethane systems, as shown for

example in Langsdorf et al (Column 5, line 36). It would have been obvious to use known materials for the foam and precoat in the method of Irwin, as modified above.

Regarding claim 22, Irwin teaches using polyolefin films such as polypropylene or polyethylene (Column 2, lines 46-48).

Regarding claim 23, Irwin teaches using a flexible film with a thickness between 1 and 5 mils (.025 to .127 mm).

Regarding claim 24, as noted above it would have been obvious to one of ordinary skill in the art to determine the applicable power density range for the corona discharge and to determine the optimum range.

4. Claims 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langsdorf et al (U.S. Patent 6,299,715) in view of Irwin (U.S. Patent 5,612,113) and Nohr et al (U.S. Patent 5,578,369) and optionally taken with Takizawa et al (U.S. Patent 6,299,714), Strobel et al (U.S. Patent 5,244,780), Hinterwladner et al (U.S. Patent 5,070,121), and Gastiger et al (U.S. Patent 5,527,629).

Langsdorf et al teach a method of making a carpet wherein the back surface of a greige good is coated with a precoat adhesive and that the adhesive can be a foamable system (Column 10, lines 24-29). A secondary backing in the form of a flexible film such as polypropylene is applied to the foam layer on the greige good and the foam layer is fully cured to form a bonded article (Column 1, lines 11-14; Column 4, lines 36-61). Langsdorf et al is silent towards corona treating the flexible polypropylene film within the claimed power density range prior to applying the film to the greige good.

Irwin is directed to a method of making a carpet wherein a primary backing with fibers tufted into it (greige good) is coated on its back surface with a precoat such as polyurethane adhesive and a flexible film, such as polypropylene, that has been corona treated in order to enhance the adhesive properties of the film, is contacted to the back surface of the precoat (Column 4, lines 15-41 and Column 2, lines 46-56).

One skilled in the art would have readily recognized in the carpet art it is desirable for such flexible films to remain adequately adhered to the greige good and it would have been obvious to take known steps to ensure adequate adhesion of the flexible polypropylene film to the foam layer in the method of Langsdorf et al, such as corona treating the film prior to application as suggested in Irwin. It is notoriously well known and conventional that corona discharge treating a surface increases its adhesive properties (improves adherence by increasing the wettability of the film) as shown for example in Strobel et al (Column 1, lines 6-10), Takizawa et al (Column 2, lines 19-27), Hinterwaldner et al (Column 23, lines 53-60), Gastiger et al (Column 1, lines 15-17), or Nohr et al (Column 6, lines 33-45). Additionally it is known in the art that corona discharge increases the adhesion properties and wettability of polyolefins, as shown in Gastiger et al (Column 1, lines 15-17) and Nohr (Column 6, lines 33-45). Furthermore it is known in the art to increase the adhesion properties of polyolefin films, such as polypropylene, to adhesives by treating the polyolefin film with corona discharge with a power density between 2 and 10 kW/m2 (0.2 to 1.0 W/cm2) by increasing its wettability resulting in increase adherence as shown in Nohr (Column 6, lines 33-45; Column 3, lines 42-43). Additionally, one skilled in the art would have readily appreciated that the

power density would depend upon a variety of factors such as the material of the film, the material is to be bonded with, etc. It would have been within the purview of one skilled in the art to determine the optimum power density for achieving the desired adhesion of the film to the precoat keeping these factors in mind and only the expected results would be achieved. It would have been obvious to one of ordinary skill in the art at the time the invention was made to treat the flexible polypropylene with corona discharge in order to enhance its adhesive properties (increase adherence by increasing the wettability of the film) in the method of Langsdorf et al as suggested in Irwin and to determine the applicable power density range for the corona discharge in order to achieve the desired adhesion of the film to the foam, as suggested in Nohr et al.

Regarding claim 26, Langsdorf et al teaches using a reactive polyurethane system (Column 10, line 57).

Regarding claim 27, one skilled in the art would have readily appreciated that the curing temperature and duration would depend upon a variety of factors such as the material worked upon, the thickness of the adhesive, the intensity of the curing source, etc. It would have been within the purview of one skilled in the art to determine the parameters for achieving an adequate adherence and to determine the optimum parameters. It would have been obvious to determine the optimum parameters.

Regarding claim 28, Langsdorf et al teaches the flexible film is polypropylene, which is a polyolefin.

Regarding claim 29, Irwin teaches using a flexible film with a thickness between 1 and 5 mils (.025 to .127 mm) and it would have been obvious to apply flexible films of known thickness in the method of Langsdorf et al, as modified above.

Regarding claim 30, as noted above it would have been obvious to one of ordinary skill in the art to determine the applicable power density range for the corona discharge and to determine the optimum range.

Response to Arguments

5. Applicant's arguments filed 6/10/04 have been fully considered but they are not persuasive.

Applicant argues that it is not notoriously well known and conventional to treat a surface with corona discharge to improve its adhesive properties (adherence with other materials). Specifically, Applicant argues that Nohr et al does not teach such. Nohr clearly teaches applying corona discharge to a polyolefin film in order to increase its wettability and hence its adhesive properties (adherence with other materials). Increased wettability and increased adhesion through corona discharge are related. Takizawa et al, Strobel et al, Gastiger et al, and Hinterwaldner et al are optionally cited to further support the assertion that it is notoriously well known and conventional to treat a surface with corona discharge to improve its adhesive properties (adherence with other materials) and to illustrate its relation with increased wettability. These references are optionally cited to further support that which is notoriously well known and conventional, despite Applicant's assertion to the contrary. It is noted that Nohr does

discuss improved adhesion by exposure to UV radiation, however one skilled in the art would have readily appreciated, in view of the notoriously well known and conventional teachings explained above, that the corona discharge treatment also aided in the increase adhesion of the adhesive and film.

One skilled in the art would have readily appreciated that it is notoriously well known and conventional that corona discharge treatment increases the adhesive properties of a surface as shown for example in Nohr, Takizawa et al, Strobel et al, Gastiger et al, and Hinterwaldner et al. Furthermore, Nohr teaches corona discharge treating a polyolefin film, such as polypropylene (the same film used in both Irwin and Langsdorf) in order to increase adhesion of the polypropylene with an adhesive wherein the power density is within the range claimed by applicant. One skilled in the art would have been motivated to and have had a reasonable expectation of success in increasing the adhesion between the polyolefin and the adhesive/foam by corona discharge treating the polypropylene film in light of the teachings of Nohr. There are no unexpected results of increased adhesion as a result of the corona discharge treatment.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(571) 272-1217**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John T. Haran

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